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VOYAGE OF ZOOLOGICAL RESEARCH IN SOUTHERN INDIA (WINTER 1926-27)

Acrydiinae (Orthoptera, Acrididae) of Southern India.

by

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With 10 Text-Figures.

The material secured by Drs. J. CARL (Geneva) and K. ESCHER (Zurich) serves as the basis for the present study. This material was taken on their scientific expedition to southern India in 1926-1927. To this has been added the previously unreported series from that region belonging to the author.

We here record one hundred and thirty eight specimens. Twenty-six species and one geographic race are treated and three genera and five species are described as new.

We have made no attempt to consider the many other species known from this region, further than to discuss those which it was necessary to consider in making the present determinations and in establishing the synonymy involved. The task has been arduous and the Acrydiinae-fauna of India will require very thorough revision before the genera, species and races which there occur, are at all well understood.

In some genera there is still much uncertainty as to just how much individual variation occurs in certain species, particularly in some of the characters which have often been assumed to have high diagnostic value. Moreover it is still extremely difficult to determine in certain cases just what differences have the highest

significance from a generic point of view. A number of the large genera encountered are clearly polyphyletic and although it has been possible in some cases to recognize and describe generic units previously confused as members of such (*Eucriotettix*, *Systolotettix*, *Mitrariella*), in other cases exotic genotypes must be located and detailed generic revision must be accomplished before such can be done (*Mazarredia*, *Hedottettix*).

Although the Indian Acrydiinae have been extensively studied by Bolivar, Kirby and Hancock, the difficulties existing at the present day are much greater than one would expect to find. Not only are the earliest descriptions (particularly those of F. Walker) often extremely difficult to place, but those of the south Indian species described by Bolivar in 1902 often lack the diagnosis of parts so important that even the generic position is sometimes uncertain.

Kirby had unfortunately studied the Acrydiinae very little before his work on them was prepared for the Fauna of British India, which appeared in 1914. In consequence numerous errors occurred and the death of that author made necessary the completion and preparation for publication of that paper by one who had never studied Orthoptera.

Hancock's numerous papers might have been of great value, had that author not repeatedly mistaken differences of individual variation for valid specific characters. His keys are unfortunately of little value, in some cases being highly misleading.

In no case was it possible for these authors to make more than a very few comparisons with historic material nor do they appear to have given anything like adequate attention to the published work of the others. Although Bolivar in 1918 has corrected a number of Kirby's errors, little attempt to define better his own species was made, while scarcely anything has been done to revise Hancock's work. Without examination of historic material such is admittedly difficult in the extreme and were it not for the fact that the Hancock collection is now included in that of the author, much of the revisionary work in the present paper would have had to be omitted.

We wish to thank Dr. Carl most heartily for the opportunity of studying the collection of this interesting Subfamily secured on his expedition.

INSECTA.

ORTHOPTERA.

Family ACRIDIDAE.

Subfamily ACRYDIINAE.

Group *Cladonotae.*

Deltonotus subcucullatus subcucullatus (Walker).

KIRBY in 1910 placed *D. tectiformis* Hancock [1] 1904 as a synonym, explaining his reason for doing this in 1914.

Examination of the originally described series in the author's collection shows that *D. cristatus* Hancock [2] 1907 must also be synonymized. A clearly adult pair from Pundalu-oya, Ceylon, from that material, have the cephalic projection of the pronotum decidedly shorter than in the others, leaving exposed the distal portion of the head, and were placed provisionally by HANCOCK in 1907. In all other features very close agreement with the typical material of this race, then recorded as *tectiformis*, is shown and we are convinced that this difference is attributable to individual variation.

Deltonotus subcucullatus gibbiceps (Bolivar).

Locality: Gudalur, Nilgiris, 1100 m., II, 12, 1927, 1 ♀.

This specimen agrees very closely with typical *subcucullatus*, differing in the slightly wider frontal costa, broader projection of cephalic portion of pronotum, which in lateral aspect is broadly rounded instead of almost acute distad, and somewhat rougher lateral surfaces of pronotum with vein-like ridges more appreciable.

KIRBY gave only "black lateral spot on each side of pronotum" to distinguish this insect from *subcucullatus*, a feature we know to be individually present or absent in material of the same species, of the related genus *Diotarsus*. We are satisfied it can be given no diagnostic value in the present case.

[1] Single type here selected: ♀; Pundalu-oya, Ceylon, May 1903 (E.E.GREEN), [HEBARD Collection, Type No. 582].

[2] Single type here selected: ♀; Hantane, Ceylon, March 1903 (E.E.GREEN), [HEBARD Collection, Type No. 581.]

We believe that, as we have observed in several other species just enough difference between Ceylonese and south Indian material is shown to warrant recognition of geographic races, but certainly not of distinct species.

Bolivar described the pronotum as truncate caudad. In the series here discussed it varies individually from acute with lateral margins convex to rather broadly convex, but in none can it be said to be truncate.

Deltonotus humilis new species
(figures 1 and 2).

This insect is easily separated from the previously described forms of the genus by the smaller size and much less ample and more rugose pronotum, which shows the following additional differences. Entirely strongly tectate but medio-longitudinal

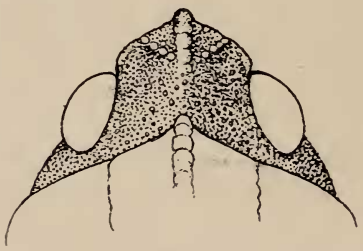

Fig. 1.

Fig. 2.

Deltonotus humilis new species.

Fig. 1. Female. Type. Elkhill, Nilgiris. Dorsal view of head and cephalic margin of pronotum. (× 18)

Fig. 2. Female. Type. Elkhill, Nilgiris. Lateral outline of dorsal portion of head and dorso-cephalic portion of pronotum. (× 18)

dorsal portion much lower and narrowly lamellate; cephalic portion in dorsal aspect obtuse-angulate, briefly produced leaving almost all of dorsal surface of head exposed, in lateral aspect coming to an acute point but by no means as much produced as in any of the phases of *subcucullatus*; caudal portion leaving all of distal portion of abdomen exposed and in dorsal aspect broadly bilobate.

Type: ♀; Elkhill, Nilgiris, forest, in moss, 2350 m., January 1927 (Carl and Escher). [Geneva Museum.]

In addition to the important characters given above the following are diagnostic. Size small, form normal for the genus. Fastigium,

unlike in *D. subcucullatus* (Walker), produced; laterad straight, then rounding sharply into the broadly convex convergent lateral margins to the median carina, which is present only distad but is there heavy; dorsal surface moderately inflated, concave laterad; in profile produced and broadly rounded. Frontal costa strongly triangularly scutellate, as strongly as in *D. subcucullatus gibbiceps* (Bolivar). Antennae short and very slender, inserted just below the eyes. Vein-like rugae on sides of pronotum only suggested by a few short irregular rugae. Tegmina and wings absent. Cephalic and median femora with margins undulate, this strongest ventrad. Caudal metatarsus much longer than the combined length of the two succeeding joints; pulvilli low and not spined, second much longer than first and third much longer than second. Ovipositor valves deep.

Allotype: ♂; Valparai, Anaimalais. March 5, 1927 (Carl and Escher). [Geneva Museum.]

Agrees closely with female. Size smaller. Fastigium less inflated meso-distad.

General coloration mottled brown like dead leaves, individually ranging from vandyke brown to blackish brown. Sides of abdomen flecked with light brown. Infra-scapular area often mottled with light and dark brown. Caudal tibiae dark brown with pale annuli, the latter almost obliterated in the intensively colored allotype.

The measurements of the female type are followed by those of a topotypic female, bearing the same data, in the author's collection. Length of body ♂ 7.8, ♀ 9.4 and 9.2; length of pronotum ♂ 5.7, ♀ 6 and 5.9; width of pronotum at shoulders ♂ 2.7, ♀ 2.9 and 2.8; length of caudal femur ♂ 4.7, ♀ 4.7 and 4.7 mm.

Group *Scelimenae.*

Gavalidium carli new species
(figures 3 and 4).

This handsome insect is nearest the Ceylonese *G. crocodilus* (Saussure), differing in its larger size and broader form, decidedly longer fastigial horns which project decidedly beyond the eyes, decidedly heavier projections on pronotum and caudal femora, the former decidedly more strongly lamellate and serrate at the shoulders and with the lateral lobes less distinctly tri-dentate, their

cephalic and caudal processes shorter, rounded lamellate, the median a tooth curved cephalad.

Only in its rougher surface does *carli* agree more closely with the Ceylonese *G. alligator* (Saussure).

Type: ♀; Gudalur, Nilgiris. February 12, 1927 (Carl and Escher). [Geneva Museum.]

Size large, form broad; slightly lorger and broader but similar to *crocodilus*. Head with horn-like projections between the eyes much longer, directed dorso-cephalad and projecting well beyond the eyes; fastigium otherwise much as in *crocodilus* but decidedly

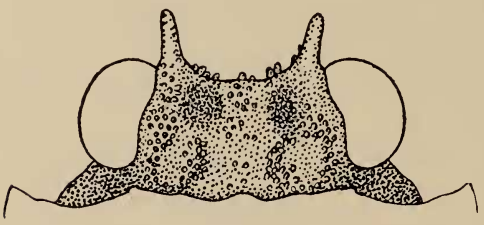

Fig. 3.

Fig. 4.

Gavalidium carli new species.

Fig. 3. Female. Type. Gudalur, Nilgiris. Dorsal view of head and cephalic margin of pronotum. (× 18)

Fig. 4. Female. Type. Gudalur, Nilgiris. Dorsal view of lateral lobe of pronotum. (Much enlarged.)

broader, the width distinctly greater (instead of distinctly less) than twice the dorsal ocular width. Frontal costa just below lateral ocelli much more suddenly protuberant and its forking broader, the flange-like forks much more widely separated dorsad, similarly slightly divergent ventrad but these lamellae lying more open and not as nearly perpendicular to the face. Antennae of similar structure to those of *crocodilus*, but not unicolorous. Pronotum very similar except as follows: broader with lateral margins decidedly more foliaceous and irregularly serrulate at the shoulders, there directed dorso-laterad; rugae and nodes, particularly caudad, prominent, more heavily developed, interrupting and obliterating the medio-longitudinal carina; lateral lobes slightly more lamellate but cephalic projection a very small lobe, median a small spine

curved cephalad (as in *crocodilus*), caudal a small narrow lobe [1]. Tegmina, wings and cephalic and median limbs as in *crocodilus*. Caudal femora with dorsal and ventral margins lobate, those of the latter narrow and blunt; ridges of external pagina raised, that mesad conspicuously produced as a strong triangular projection. Ovipositor very small for so large an Acrydiine.

Allotype: ♂; same data as type, but taken February 10, 1927. [Geneva Museum.]

Very similar to female but smaller. Lobes and spines sharper.

In the five specimens before us, as in most lobate and spinose species, there is considerable individual variation in the size and number of the lobes and spines.

General coloration dark brown. Antennae paler proximad, thence blackish with intersections of joints buffy. Cephalic and median tibiae blackish with heavy buffy annuli (which are almost obliterated in one dark individual). Caudal tibiae buffy, less conspicuously annulate with brown.

The series shows scarcely any size variation. Length of body ♂ 12, ♀ 14; length of one of horns of fastigium ♂ 0.42, ♀ 0.43; length of pronotum ♂ 20.8, ♀ 23; width across pronotal shoulders ♂ 5.5, ♀ 7.2; length of caudal femur ♂ 6.8, ♀ 8 mm.

Localities: Gudalur, Nilgiris, 1100 m., II, 10 and 12, 1927, (on stream), 3 ♂, 1 ♀, allotype, paratypes and type.
Mudumalai, Nilgiris, 1000 m., II, 9, 1927, (on stones along river), 1 ♀, paratype.

Scelimena Serville.

1839. *Scelimena.* Serville, Hist. Nat. Ins., p. 762.
1914. *Abbasia.* Kirby, Fauna British India, Orth. (Acrid.), p. 27.

Failure to recognize as such immature material of *Scelimena* led to the description of the synonym *Abbasia.* This unfortunate occurrence is further discussed below under *S. subserrata* (Kirby).

And so we find that presence of wings, not seen to be in process

[1] In the series the appendages of the lateral lobes are very irregular, sometimes with three distinct projections followed by a very small lobe, never with the appearance of three almost equal projections, which is seen to be characteristic of *alligator* and much more constant in thirty-four specimens of that species before us.

of development, led to specific synonymy by Serville in 1839 and generic synonymy by Kirby in 1914.

Scelimena producta (Serville).

Large Javanese series before us of this species, described from that Island, show it to be widely distinct from any of the several Indian species of *Scelimena* before us. We believe that *producta* does not occur in India. Bolivar in 1918 has noted that Kirby's figure of 1914 does not apply even to this genus, at which time the latter recorded *producta* from Trivandrum, Madras.

Scelimena harpago (Serville).

1839. *Tetrix uncinata.* Serville, Hist. Nat. Ins. Orth., p. 763. ([Juv.] ♀; Bombay, India.)

Localities: Coonoor, Nilgiris, 1850 m., V, 19, 1923, (P. S. Nathan), 1 ♀, [Hebard Cln.].
Coimbatore, Madras Pres., 1922, (A. P. Nathan), 1 ♀, [Hebard Cln.].
Madras, 1 ♀, [Hebard Cln.].

The original description and Kirby's figure at the time he placed *Scelymena contracta* Walker as a synonym of *uncinata* shows beyond question this synonymy, when the appearance of immature material of *Scelimena* is recognized. Presence of wings, which are not seen to be in process of development unless pulled out, has led to constant failure to recognize the later stages of immaturity as such. Blackish wings, as described by Serville, are indeed present, these being the leathery partially developed organs of the nymphal stage and not the delicate transparent wings found in the adult.

Scelimena subserrata Kirby.

1914. *Abbasia subserrata.* Kirby, Fauna British India, Orth. (Acrid.), p. 28, fig. 27. ([Juv.] Tenmalai, Travancore, India.)
1915. *Scelimena spinata.* Hancock, Records Indian Mus., XI, p. 66. (♂, ♀; Trivandrum, Travancore, India.)

Localities: Gudalur, Nilgiris, 1100 m., IX, 13, 1917, (Nagnath), 1 ♀, [Hebard Cln.].
Mudumalai, Nilgiris, 1000 m., II, 9, 1927, (on stones along river), 2 ♂.

Comparison of KIRBY's original description and figure of *subserrata* with the original series of *spinata* [1] shows plainly that that author described the immature condition, HANCOCK adult material of the same species the following year.

Eucriotettix new genus.

As REHN in 1904 selected as genotype of *Criotettix* Bolivar the Asiatic *Acrydium bispinosum* Dalman, and as *miliarius* Bolivar, selected as genotype of *Acantholobus* Hancock by KIRBY in 1910, is congeneric with that species, REHN has recently placed *Acantholobus* as a synonym of *Criotettix*.

Thus *Criotettix* Bolivar must be restricted to those Indian species which of recent years have been referred to *Acantholobus* and we propose *Eucriotettix* to include those species which since the erection of *Acantholobus* had been referred to *Criotettix*.

For *Eucriotettix* we propose the genotype *Criotettix tricarinatus* Bolivar.

We are able to place as members of this genus *indicus* Bolivar, *tricarinatus* Bolivar, *spinilobus* Hancock, *maculatus* Kirby, *oculatus* Bolivar, *flavopictus flavopictus* Bolivar, *flavopictus maximus* Hancock (with probable synonym *grandis* Hancock), *aequalis* Hancock and *montanus* Hancock. HANCOCK's *orientalis*, *pallidus*, *dohertyi*, *annandalei* and *gravelyi* should also, we believe, be assigned to *Eucriotettix* as here delimited.

This genus may be distinguished as follows. Antennae inserted between lower portion of eyes. Spine of pronotal lateral lobes curved cephalad. Fastigium nearly equal to decidedly less than ocular width. Frontal costa narrowly divided. Eyes and fastigium not strongly elevated. Pronotum with parallel prozonal lateral carinae; supplementary carinae indicated between shoulders. Tegmina and wings present.

In studying south Indian species we find that HANCOCK has increased the existing difficulties by describing *Bolotettix*. The genotype, the Bornean *B. validispinis* Hancock agrees with *Eucriotettix tricarinatus* in general form and spined pronotal lateral lobes, but with *Systoloderus* instead in the pronotal prozona being convex

[1] Single type: ♂; Kellar, Trivandrum, Travancore, India, January 1897, HEBARD Collection, Type No. 677.

and lacking lateral carinae, while the position of the insertion of the antennae (high and distinctly between the eyes in *Eucriotettix*, low and below eyes in *Systolederus*) and narrow vertex (nearly to decidedly less than the ocular width in *Eucriotettix*, very narrow in *Systolederus*) are almost exactly intermediate between these genera. Hancock's Bornean *parvispinus* and *planus* are also members of *Bolotettix*, but of the other species which were referred to that genus we can definitely state from examination of material that *oculatus* is a member of *Eucriotettix*. His *armatus, triangularis*, *lobatus* and *quadratus* are here referred to *Systolotettix*, where we place his *tricarinatus* and *pictipes* as synonyms of *S. exsertus* (Bolivar).

The first four species here treated are very closely related. We believe that they may be separated as follows:

A. Vertex nearly or slightly less than ocular width in diameter.
  B1. Spine of pronotal lateral lobes horizontal, not curved. Size larger. *indicus* (Bolivar).
  BB1. Spine of pronotal lateral lobes horizontal, distad curved cephalad. Size smaller. *spinilobus* (Hancock).

AA. Vertex decidedly less than ocular width in diameter.
  B2. Spine of pronotal lateral lobes horizontal, not curved. Size larger as in *indicus*. *tricarinatus* (Bolivar).
  BB2. Spine of pronotal lateral lobes horizontal, distad curved cephalad. *maculatus* (Kirby).

Eucriotettix indicus (Bolivar).

Bolivar in 1918 placed *Criotettix maculatus* Kirby, described from Burma in 1914, as a synonym of this species, described from Trichinopoly, Madras, in 1902. We do not believe that action to have been correct, as the straight horizontal (*indicus*) or horizontal but curved cephalad (*maculatus*) spine of the pronotal lateral lobes is a valid character in separating the allied species *tricarinatus* (Bolivar) and *spinilobus* (Hancock).

Locality: Coimbatore, Madras Pres., II, 7, 1921 (A. P. Nathan), 2 ♀, [Hebard Cln.].

The present specimens differ from the original description in having the median carina of the vertex and median and lateral carinae of the pronotum quite as well developed as in *tricarinatus*. Their pronotal length is 13.7 and 13.6 mm.

Eucriotettix spinilobus Hancock.

Hancock examined the type of *Criotettix obscurus* Kirby from Vurkalay, Travancore Coast, India, and found it to be a synonym of *spinilobus* in 1915.

In addition to the originally described series, we have before us one female from Maskeliya, Ceylon, taken March 10, 1909, by T. Bainbrigge Fletcher.

In ten specimens of this species before us the spine of the pronotal lateral lobes is curved forward, while in fifty-seven specimens of *tricarinatus* it is straight, transverse. Though in some species subject to individual variation, we believe that this feature constitutes a valid diagnostic character to separate these species.

Eucriotettix tricarinatus (Bolivar).

In addition to the material from Ceylon, discussed by Hancock in 1905, including two paratypes, the following series is before us.

Localities: Coimbatore, Madras Pres., II, 8, 1921 (A. P. Nathan), 8 ♂, 3 ♀, [Hebard Cln.].
Peradeniya, Ceylon, III and V, 1903 (E. E. Green), 1 ♂, 1 ♀, [Hebard Cln.].
Kaduganawa, Ceylon, I, 1903 (E. E. Green), 1 ♀, [Hebard Cln.].
Polgahwela, Ceylon, V, 10, 1908, 1 ♀, [Hebard Cln.]
Weligama, Ceylon, I, 16, 1908 (T. Bainbrigge Fletcher), 1 ♂, 2 ♀, [Hebard Cln.].
Madulsima, Ceylon, VIII, 12 to 17, 1908 (T. Bainbrigge Fletcher), 1 ♂, 6 ♀, [Hebard Cln.].

Eucriotettix maculatus (Kirby).

Under *Eucriotettix indicus* (Bolivar) we have above given our reasons for considering *maculatus* a valid and distinct species.

Localities: Sidapur, Coorg, X, 31, 1917 (V. R. Rao), 1 ♀, [Hebard Cln.].
Shembaganur, Palnis, IV, 17, 1927 (grassland), 1 ♀.
Gudalur, Nilgiris, 1100 m., II, 12, 1927 (mountain brook), 1 ♂, 1 ♀.
Mudumalai, Nilgiris, 1000 m., II, 5, 1927, 1 ♂.

The specimen from Sidapur agrees closely with the 1914 figure of the Burmese type except that the slender spine of the pronotal lateral lobes is longer, slightly longer even than that figured at the same time by Kirby for his *obscurus* (= *spinilobus*). It measures: length of body 8.8, length of pronotum 12.5, width of pronotum at shoulders 2.7, width of interocular space 0.5, length of spine of lateral lobes 0.78 mm.

Eucriottetix flavopictus flavopictus (Bolivar).

1912. *Criotettix extremus.* Hancock, Mem. Dept. Agr. India, Ent. Ser., IV, p. 132. (♂, Shevaroys, 4000 feet, Madras, India.)

Bolivar described *flavopictus* from Kodaikanal, in the Palnis Hills, and comparison of the unique type of *extremus* [1] with that description and the material here recorded shows beyond question the synonymy here indicated. Hancock originally stated that *extremus* "resembles *flavopictus*".

In 1915 that author placed *extremus* as a race of his *maximus*. Though the forms are exceedingly close, it is true that a southern and northern race exist, the proper name for the latter being consequently *flavopictus maximus*. Further difficulty is found in the fact that *Criotettix grandis* Hancock may prove to be a synonym of *flavopictus maximus*.

This species is very close to *Eucriotettix oculatus* (Bolivar), differing in the slightly more distinct supplementary carinae of the pronotum and its conspicuously more coarsely roughened dorsal surface.

Localities: Coonoor, Nilgiris, 1700 m., XII, 22, 1926 and I, 1927, 4 ♂, 5 ♀.
Gudalur, Nilgiris, 1100 m., II, 12, 1927 (mountain brook), 1 ♂.

[1] Hebard Collection, Type No. 639.

Mudumalai, Nilgiris, 1000 m., II, 9, 1927 (on stones along river), 2 ♂.
Attakatti, Anaimalais, 1000 m., II, 11 and 23, 1927 (on stones in stream bed), 3 ♂, 3 ♀.
Kodaikanal, Palnis, 2200 m., III, 22, 1927, 1 ♂.
Maryland, Palnis, 1600 m., IV, 19, 1927, 1 ♀.

Thoradonota apiculata Hancock.

This is a smaller and more slender insect than *T. spiculoba* Hancock.

Localities: Mudumalai, Nilgiris, 1000 m., II, 4 and 9, 1927 (on water and on stones along river), 1 ♂, 1 ♀.
Kharkur, Nilgiris, V, 1910 (E. E. Green), 1 ♂, determined by Hancock [Hebard Cln.].

These specimens are caudate and all very small: length of pronotum ♂ 8.8 and 8.6, ♀ 9.8 mm.

Thoradonota spiculoba Hancock.

1914. *Acantholobus cuneatus.* Kirby (in part not of Hancock, 1904), Fauna British India, Orth. (Acrid.), p. 40, figs. 37 to 39. (♂, ♀; Colombo, Ceylon.)

1915. *Thoradonota sinuata.* Hancock, Records Indian Mus., XI, p. 81. (♀; Moleshwar, Satara District, India.)

Kirby in 1910 and 1914 overlooked this genus described in 1907 and species described in 1912 from Pupri, Mazaffarpur, Pusa and Durbhanga in Bengal, as did Bolivar in 1918.

The slenderer and more nearly transverse spine of the pronotal lateral lobes and its less rugose surface in the type of *sinuata* constitute features wholly attributable to individual variation and we consequently place that name as a synonym.

Localities: Gudalur, Nilgiris, 1100 m., V, 1910 (E. E. Green), 1 ♂, 1 ♀ (abbreviate), [Hebard Cln.]; (mountain brook), 2 ♀ (1 abbreviate, 1 subcaudate).
Mudumalai, Nilgiris, 1000 m., II, 9, 1927 (on stones along river), 1 ♂ (caudate).

Of the two females secured the same day at Gudalur, one shows the maximum rugosity in twenty-two specimens of *spiculoba* before us, the other being as smooth as the decidedly smooth Moleshwar female.

Criotettix latifrons new species
(figures 5 and 6).

Under *Eucriotettix* we have explained the reason why *Criotettix* must be used for the genus which for some years has been recognized as *Acantholobus*.

The present is a remarkable species agreeing with the genus *Eucriotettix* here described in having the spine of the pronotal lateral lobes transverse instead of directed obliquely caudad. We place it in *Criotettix* as in other respects and particularly in the lateral carinae of the prozona which are convergent caudad, it agrees instead with this genus.

Close affinity is shown to the Ceylonese *C. miliarius* Bolivar. A series of that insect from Ceylon is decidedly variable but all differ in having the spine of the pronotal lateral lobes directed obliquely caudad. The vertex is nearly as broad to slightly narrower in those males, the pronotal carina variable in intensity with supplementary carinae between the shoulders often obsolete. In all the antennae are pale with suffused apices, but longer and not as pale as in *latifrons*. We place *Acantholobus miliarius cuneatus* Hancock, 1904, as a synonym of *miliarius*, based on the abbreviate pronotal condition of that insect, as suggested by Hancock in 1915 and shown by the original series [1].

Previous Indian records of *Criotettix saginatus* Bolivar, a species placed by Kirby as a synonym of *Criotettix inornatus* (Walker), but which action has, we believe rightly, been questioned subsequently by Hancock and Bolivar, are probably referable to *miliarius* or *latifrons*. Our Malayan and Burmese material of *saginatus* shows it to differ in being more slender with narrower fastigium than in those species.

Type: ♂, Coimbatore, Madras Presidency. February 9, 1921. (A. P. Nathan). [Hebard Collection, Type No. 1156.]

[1] From which we select as type a female, Kesbewa, Ceylon, April 1903, Hebard Collection, Type No. 590.

Size moderately large for the smaller species of the genus, form moderately robust. Interocular space decidedly broader than dorsal ocular width, eyes projecting beyond fastigium, the marginal carinae of the latter distinct laterad and curving toward each other to the transverse but there becoming immediately obsolete, the median carina weakly indicated only distad on each side of which the surface of the vertex is decidedly depressed, concave. Frontal costa in lateral aspect moderately roundly produced between antennae, forks narrow. Lateral ocelli in line with median portion of eyes and just above antennae, the ventral margins of the

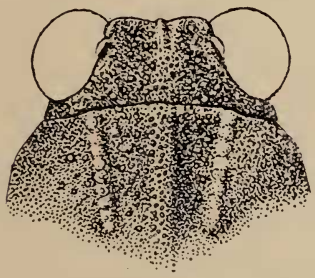

FIG. 5.

FIG. 6.

Criotettix latifrons new species.

FIG. 5. Male. Type. Coimbatore, Madras. Dorsal view of head and cephalic portion of pronotum. (× 18)

FIG. 6. Male. Type. Coimbatore, Madras. Dorsal outline of lateral lobe of pronotum. (Much enlarged.)

antennae sockets being faintly higher than the ventral margin of the eyes. Antennae moderately short. Pronotum with dorsal surface appearing rather smooth but with low blisters between shoulders where the surface is moderately convex and very minutely tuberculate caudad; lateral carinae of prozona percurrent, distinct and convergent caudad; medio-longitudinal carina a fine raised line, indistinct in places but moderately raised and swollen between prozona and metazona and forming a coarser line on the prozona than do its lateral carinae; no supplementary carinae present. Pronotum strongly caudate, lateral lobes horizontally produced, spine stout, straight and almost transverse. Cephalic and median femora moderately elongate, margins feebly undulate (this scarcely appreciable in paratype). Caudal femora moderately elongate with margins straight. Caudal metatarsus distinctly longer than com-

bined length of the two succeeding joints; first pulvillus triangular, second nearly intermediate in length between first and elongate third pulvillus.

General coloration uniform mars brown or prouts brown, the caudal portions of the pronotum and exposed wing margins paler and more tawny. Femora slightly darker, but their ventral surface and the tibiae and tarsi paler and immaculate. Antennae conspicuously warm buff suffused with brown distad. Sides of abdomen flecked with light brown.

The measurements of a paratypic male, taken at Mudumalai, Nilgiris, at 1000 meters, February 5, 1927, by Carl and Escher, and belonging to the Geneva Museum, follow those of the type. Length of body 9 and 8.9, interocular width at apex of fastigium 0.68 and 0.68, interocular width at base of fastigium 0.71 and 0.71, length of pronotum 15 and 15, width of pronotum at shoulders 3.2 and 3.2, length of spine of pronotal lateral lobes 0.53 (apices broken in paratype), length of caudal femur 6.4 and 6.4 mm.

Systolotettix new genus.

This genus is erected to include a series of species which are related on the one hand to *Eucriotettix* and *Criotettix* as here defined and on the other to *Systolederus*.

The most important feature is the elevated eyes and vertex which are raised well above the plane of the pronotum, though not as strongly so as in *Systolederus*. The interocular space is very narrow, but not as extremely narrowed as in that genus. The lateral lobes of the pronotum are spined or angulate obliquely caudad, in this feature agreeing with *Eucriotettix* and *Criotettix*. The lateral carinae of the prozona are straight as in *Eucriotettix*, these carinae being much weaker in some but not in all the species of *Systolederus*.

We here select *Criotettix exsertus* Bolivar as genotype of *Systolotettix*. Hancock's *armatus*, *triangularis*, *lobatus* and *quadratus* also belong to this genus. That author placed these species in his *Bolotettix*, but they are certainly not congeneric with his genotype, the Bornean *Bolotettix validispinis*. We have discussed the location of the species assigned to *Bolotettix* by Hancock under *Eucriotettix* in the present paper.

Systolotettix exsertus (Bolivar).

1912. *C[riotettix] tricarinatus.* Hancock (not of Bolivar, 1887), Mem. Dept. Agr. India, Ent. Ser., IV, p. 135. (Shevaroys, Madras, India, at 4000 feet.)

1915. *Bolotettix pictipes.* Hancock, Records Indian Mus., XI, p. 77. (♀; Shevaroys, Madras, India, at 4000 feet.)

Hancock's material enables us to correct the above record and place the above synonym of this species, described from Kodaikanal in the Palnis Hills in 1902.

Localities: Coonoor, Nilgiris, 1800 m., XII, 22, 1926 (on gneiss), 4 ♂, 4 ♀.
Attakatti, Anaimalais, 1000 m., II, 1927 (on stones on bed of brook), 1 ♂.
Below Kukkal, Palnis, 1700 m., IV, 3, 1927 (in rice fields), 4 ♂, 1 ♀.
Kodaikanal, Palnis, 2200 m., III, 22, 1927, 1 ♂.

The females of this series have the pronotal length ranging from 10.7 to 11.2 mm. In Hancock's three females before us it is 11.7 to 12.2 and is given as 10 for the female type. In the ten males we have examined this dimension ranges from 9 to 10.4 mm.

The large majority are dark with face, genae, ventral portions of lateral lobes of pronotum and occasionally most of the caudal femora whitish buff. A very few are entirely dark and one female from Shevaroys has the entire dorsum buff. The male from Attakatti has the spines of the pronotal lateral lobes longer and almost transverse, these being uniformly short and strongly oblique in all the others. The specimen is, however, in all other respects typical.

Group *Metrodorae.*

Systolederus greeni Bolivar.

Localities: Gudalur, Nilgiris, 1000 m., IX, 13, 1917 (Y. R. Rao), 1 ♀, [Hebard Cln.].
Coonoor, 1700 m., I, 27, 1927, 1 ♀.

Mazarredia Bolivar.

It is evident that this genus is polyphyletic. We are, however, unable at the present time to do other than follow the concept of Bolivar and Hancock.

Mazarredia dubia Hancock.

Localities: Sidapur, Coorg, V, 6 and VI, 1, 1917 (Y. R. Rao), 1 ♂, 1 ♀, [Hebard Cln.].
Valparai, Anaimalais, 1300 m., III, 1927, 1 ♂.
Anaimalais, 1300 m., I, 22, 1912 (T. B. Fletcher), 1 ♂, determined as *dubia* by Hancock) [Hebard Cln.].

Mazarredia nilgirica new species
(figures 7, 8 and 9).

This handsome insect superficially resembles *M. sculpta* Bolivar [1]. That insect differs widely, however, in the wider and more produced vertex, broader forks (though narrow) of the frontal costa which in profile is more produced toward vertex as well as between

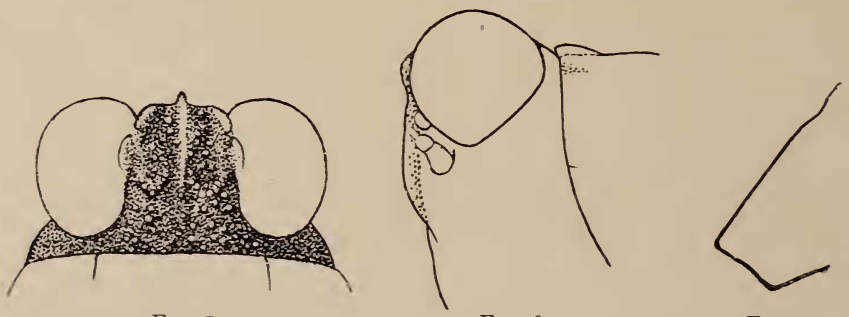

Fig. 7. Fig. 8. Fig. 9.

Mazarredia nilgirica new species.

Fig. 7. Female. Type. Kharkur, Nilgiris. Dorsal view of head and cephalic margin of pronotum. (× 18)

Fig. 8. Female. Type. Kharkur, Nilgiris. Lateral outline of dorsal portion of head and dorso-cephalic portion of pronotum. (× 18)

Fig. 9. Female. Type. Kharkur, Nilgiris. Dorsal outline of lateral lobe of pronotum. (Much enlarged.)

antennae, caudate pronotum with longer prozona, decidedly shallower impressions caudad of shoulders, much weaker nodes in caudal portions and bicolored tegmina.

In *nilgirica*, on the external faces of the caudal femora beyond the median point two of the ridges are raised in distinct blunt

[1] Material so determined by Brunner from Palon, Pegu, Burma, is in the author's collection.

projections. This is an unusual feature which has been found by us elsewhere somewhat similarly developed only in the genus *Thoradonota* Hancock.

Type: ♀; Kharkur, Nilgiris. May, 1910. (E. E. Green.) [Hebard Collection, Type No. 1157.]

Size moderately large for the genus; form moderately robust, much as in *sculpta* [1]. Eyes prominent, slightly elevated. Interocular space distinctly narrower than dorsal ocular width and narrowing cephalad; vertex decidedly fossulate on each side of medio-longitudinal carina, these areas bounded caudad by a distinct prominence on each side, lateral carinae convex-convergent cephalad but disappearing before reaching median carina. Eyes projecting cephalad of free margin of fastigium as far as does the carina forming the fastigio-facial angle. Frontal costa much as in *sculpta*, but convex projection between antennae slightly less decided and forks narrow with margins distinctly less oblique and lamellate, nearly vertical; dorsad in lateral aspect it is slightly produced so that at the lateral ocelli broad concavity is apparent, this not as marked as in *sculpta*. Lateral ocelli at ventral third of eyes. Antennal sockets so situated that a line between ventral margins of eyes would pass through their dorsal portion. Antennae missing. Pronotum with cephalic margin truncate, prozona distinctly broader than long with distinct lateral carinae slightly convergent caudad; caudal portion very slightly produced beyond caudal femora with narrow apex truncate [2]; dorsum deplanate, tuberculate and very shallowly but very coarsely impresso-punctulate, moderately depressed between the lateral margins and low but percurrent median carina present, which is slightly highest between prozona and metazona and faintly undulate caudad, in that portion with a moderate number of well developed scattered nodes (much more decided than in *sculpta*); between shoulders with straight distinct short supplementary carinae as in *sculpta* but a prominent, much deeper concavity at caudal extremity of each. Lateral lobes of pronotum slightly oblique, briefly produced, rounded subrectangulate, the caudal portion moderately obtuse-angulate produced

[1] The pronotum rather abbreviate, briefly surpassing apices of caudal femora, in this unique type.

[2] It must always be remembered that in most Acrydiids both abbreviate and caudate pronota are developed in the same species, though in some species only one of these conditions occurs.

to a lesser degree, so that between these the margin is very broadly obtuse-angulate. Tegmina oval, slightly smaller than in *sculpta,* with humeral vein alone prominent and raised network of veinlets, prominent in that species, indistinct. Wings extending to apex of pronotum. Ovipositor valves elongate and narrower than in *sculpta.* Cephalic femora with margins faintly undulate, median femora with margins distinctly so, caudal femora of moderate length with distinct oblique ridges; all much as in *sculpta* but that species showing no conspicuous nodes on the latter (see above). Caudal metatarsus as in *sculpta*, equal in length to last joint, the three pulvilli of nearly equal size.

General coloration natal brown. Tegmina slightly paler but with less than ventral half in all but distal portion blackish brown, so that, unlike in *sculpta*, these organs are conspicuously bicolored. Tibiae darkened with obscured paler annuli, but tarsi buffy with distal portion of last joint black; caudal metatarsus at extreme apex, succeeding joint and immediate base of last joint also black. Caudal femora with dorsal and ventral margins flecked with dark and pale brown but not as distinctly so as in *sculpta*, though the tibial and tarsal markings are more distinct in *nilgirica.*

Length of body 12.6, interocular width (at base of fastigial lateral carinae) 0.64, length of pronotum 13, width of pronotum, at shoulders, 3.7, height of apical triangle of pronotal lateral lobes 0.15, length of caudal femur 8.7, length of ovipositor 2 mm.

Mitrariella new genus.

This genus is erected to include *provertex* described by Hancock and referred by him to *Spadotettix.*

It is apparently nearest *Miriatra* Bolivar (July 1906) [*Mitritettix* Hancock (in paper submitted July 15, 1906)], proposed for the preoccupied *Mitraria* Bolivar. It is probable that *Rostella* Hancock 1913 is a synonym of that genus, a number of errors having apparently occurred. We believe that *Mitraria producta* Bolivar, described from the upper Amazon was mislabelled and is probably a synonym of *Tetrix phyllocerum* Haan, described from Java, as is also *Rostella processus* Hancock described from Borneo.

From *Mitrariella* we find *Miriatra* to differ in the larger size, much more produced and lamellate fastigium with decided medio-

longitudinal dorsal carina, frontal costa broader between the short antennae and there in lateral aspect less convex, pronotum with cephalic margin obtuse-angulate produced or dentate mesad, the medio-longitudinal carina heavier and not undulate, supplementary carinae absent, pronotal lateral lobes subrectangulate and less produced, broader cephalic femora which narrow suddenly apically and elongate metatarsus with third joint of equal length.

As these genera are clearly derived from the same stock, it is evident that caudal metatarsal length, whether equal to or longer than the last joint, can not be used to separate the *"Scelimenini"* from the *"Metrodorini"* as has been stated. It was apparently at least in part this feature which led HANCOCK to place *Spadotettix* originally (1910) in the vicinity of *Tetrix* (= *Acrydium*, a genus of the *Acrydiae*) and then transfer it to the *Metrodorae* near *Mitritettix* in 1912.

We find *Mitrariella* to be characterized as follows. Eyes widely separated. Fastigium strongly produced, lamellate, its free margins oblique-convergent, then notched at the median carina which is distinct only apically. Face decidedly oblique, frontal costa forking gradually and interval narrow, in lateral aspect contour broadly convex between the elongate antennae which are inserted slightly above the ventral margins of the eyes, lateral ocelli slightly above the middle of the eyes. Pronotum caudate; cephalic margin transversely truncate, lateral carinae of prozona parallel; medio-longitudinal carina swollen and somewhat raised between prozona and metazona, thence undulate, with two low supplementary carinae on each side; lateral lobes briefly horizontally reflexed with acute-angulate projection directed weakly caudad. Cephalic and median femora with ventral margins weakly lobate. Caudal femora unusually smooth. Cephalic and median tibiae weakly sulcate dorsad [1]. Caudal metatarsus slightly longer than last joint, its pulvilli with second longer than first and third longer than second.

Mitrariella provertex (Hancock).

The triangularly produced fastigium, notched on each side of the projecting distal carina, which rounds into the frontal costa,

[1] Contrary to HANCOCK's description, this sulcation is present in the material from which he described *Rostella processus* (= *Miriatra phyllocerus* (Haan)).

readily distinguishes this interesting species from any other Indian Acrydiid.

It is distinguished from *Spadotettix fletcheri* (Hancock) by the more triangular shape and greater production of the vertex, parallel lateral carinae of the prozona, a pair of supplementary carinae on each side running far caudad on the metazona instead of the more usual short single supplementary carina on each side between the shoulders and subspinose or spinose pronotal lateral lobes.

Localities: Pykara River, II, 3, 1927, 1 ♀.
Masinigudi, Nilgiris, 1000 m., II, 1, 1927 (on brook), 1 ♂.
Gudalur, Nilgiris, 1000 m., II, 12, 1927 (mountain brook), 1 ♂.
Valparai, Anaimalais, 1100 m., III, 9, 1927 (small shrubby valley), 1 ♂, 3 ♀.

The previously unknown male agrees closely with the female but is somewhat smaller. The species is clearly quite variable, the spine of the pronotal lateral lobes is weakly or decidedly directed obliquely caudad (Pykara female weakly, Gudalur male decidedly) often short and broader so that it might better be termed a decided acute-angulate projection (balance of series). The supplementary pronotal carinae are less regular, with more longitudinal adjacent rugae and medio-longitudinal carina more suddenly and strongly undulate in the type, though two females of the present series show a similar tendency.

Group *Acrydiae*.

Euparatettix variabilis (Bolivar).

The female type, here selected, of *Euparatettix corpulentus* Hancock [1] shows that insect to be very close, differing only in its larger size and pronotual dorsum slightly smoother and slightly more swollen between the shoulders than in any of our series of *variabilis*. Such differences have little value and racial status or synonymy may be indicated.

Locality: Coimbatore, plains, 400 m., II, 7 and 8, 1921 (A. P. Nathan), 6 ♂, 6 ♀ (all caudate).

[1] Hebard Collection, Type No. 701; Chapra, Bengal, taken by Mackenzie.

- One male of this series is noticeably smaller than the others. Two females show strongly a pale medio-longitudinal pronotal band, one a pale saddle weakly and one pale lateral margins weakly.

Ergatettix Kirby.

1914. *Ergatettix*. KIRBY, Fauna of British India, Orth. (Acrid.), p. 69. Genotype, by monotypy: *E. tarsalis* Kirby.

1915. *Indatettix*. HANCOCK, Records Indian Mus., XI, p. 127. Genotype, by original designation: *I. nodulosus* Hancock.

Comparison of the type of *nodulosus* [1] with subsequently reported material from Bombay, type locality of *tarsalis*, and study of KIRBY's diagnosis, convinces us that the above synonymy is correct; *nodulosus* and *dorsifera* (of which *tarsalis* is a synonym) representing merely different phases of the same species.

This genus is best separated from *Euparatettix* Hancock by the more elevated and approximate eyes; lateral ocelli placed close to the antennal sockets and decidedly further removed from the margin of the fastigium; hirsute ventral surface and limbs and thickened cephalic and median femora in the male sex. The size is usually decidedly smaller and there are forms which are decidedly rugose with nodose medio-longitudinal pronotal carina and nodes on the external surface of the caudal femora as well, such roughening not appearing to our knowledge in *Euparatettix*.

Material of *Ergatettix* is before us from as far east and north as Java and Japan [2].

Ergatettix nodulosus (Hancock).

This insect may represent merely the extreme of rugosity developed in *E. dorsifera* (Walker). The specimens before us average small and slightly more robust than those of the series referred to that insect.

Each series from Pupri, Muzafferpur and Pusa, Bihar; from Calcutta, Bengal, and from Munshijunj, Assam, exhibits both

[1] A female, here selected, from Pupri, Muzaffarpur, Bihar, India, taken January 6, 1905; HEBARD Collection, Type No. 739.

[2] In Japan such may have been confused with the, in many respects, very similar *Euparatettix histricus* (Stal), which species we have, however, from the Loo-Choo Islands.

heavily nodose and smooth individuals. We are therefore satisfied that such differences are not recognizable as geographic races, but indicate either the presence of two closely related species or represent merely strikingly different appearing extremes of a single species.

Ergatettix dorsifera (Walker).

1871. *Tettix dorsifera.* Walker, Cat. Dermapt. Saltat. British Mus., V, p. 825. (♂; Bombay, India.)

1905. *Euparatettix parvus.* Hancock, Spolia Zeylanica, II, p. 145. (♂; Elephant Pass, Ceylon.)

1909. *Euparatettix pilosus.* Hancock, Trans. Ent. Soc. London, p. 410.

1914. *Ergatettix tarsalis.* Kirby, Fauna British India, Orth. (Acrid.), p. 70, figs. 62 and 63. (♀; Calcutta, India.)

From comparison of the type of *parvus* in the author's collection with the original description and further data on the type of *dorsifera*, kindly sent us by Uvarov, and material from Bombay before us, we are convinced of this synonymy. Hancock furthermore correctly placed his *pilosus* under his *parvus* in 1912.

As noted above, we also believe that Hancock's *nodulosus* may be based on material merely representing the maximum rugosity developed in the present insect.

Material before us from Calcutta, identical with that figured as *tarsalis*, shows clearly that synonymy. Bolivar placed that name as a synonym of his *scabripes*, but Javanese material before us of a species of *Ergatettix* represents a distinct though closely related species and we believe that *scabripes* will be found to be distinct.

Hancock's north Indian *Euparatettix bengalensis* (which in 1915 he reduced to a variety of *crassipes*) his smoother *crassipes*, *crassipes hybridus*, *interruptus* and *lobulosus* are probably also synonyms.

The south Indian material recorded in 1915 by Hancock as *Indatettix interruptus* (Brunner) represents *dorsifera* and it is probable that the same is true of Bolivar's material recorded that year from this region as *Euparatettix scabripes* (Bolivar) and *Euparatettix interruptus* (Brunner). It is indeed quite possible that *interruptus* (1893) is also a synonym of *dorsifera.*

The only previously unreported material from southern India before us is the following.

Locality: Bassein Fort, Bombay, IX, 1909, 1 ♀ [Hebard Cln.].

Paratettix cingalensis (Walker).

1915. *Acrydium tectitergum.* HANCOCK, Records Indian Mus., XI, p. 115. (♂, ♀; Hoshangabad and Surat, Bombay, India.)

To the established synonyms, *Paratettix variegatus* Bolivar and *Tettix atypicalis* Hancock, must be added HANCOCK's *atypicalis ceylonicus*, based on the abbreviate condition.

Comparison of the original series of *tectitergum* [1] with series from India and Ceylon before us shows no real diagnostic difference. The type is simply a small dark caudate individual of this variable species. Affinity to *Acrydium subulatum* (Linnaeus) originally noted does not exist and even resemblance is superficial in the extreme.

This species is an aberrant member of the genus *Paratettix*, the raised pronotal median carina being apparently HANCOCK's only reason for placing it in *Tetrix* (= *Acrydium*). KIRBY's 1914 figure is poor and does not give the general appearance of the insect at all well.

Localities: Kallar. Nilgiris, 500 m., V, 18, 1923 (P. S. NATHAN), 2 ♂, 2 ♀ (pair caudate, one male subcaudate, one female decidedly subcaudate), [HEBARD Cln.].
Coonoor, Nilgiris, 1700 m., I, 1927, 1 ♀ (subcaudate).
Maryland, Palnis, 1600 m., IV, 19, 1927, 1 ♂ (decidedly subcaudate).

Hedotettix gracilis (Haan).

1912. *Hedotettix diminutus.* HANCOCK, Mem. Dept. Agr. India, Ent. Ser., IV, p. 148. (♂, ♀; Surat, Bombay, India[2].)

The type of *diminutus* shows no significant difference from large series of *gracilis* before us. Indeed its size, decidedly smaller than normal, is the only noteworthy feature of individual variation.

Localities: Masinigudi, Nilgiris, 1000 m., II, 1, 1927 (on stream), 1 ♀.

[1] Single type here selected, HEBARD Collection, Type No. 719; Hoshangabad, India, IX, 14 to 19, 1911 (T. BAINBRIGGE FLETCHER), 1 ♀.
[2] Single type here selected: ♀; Surat, Bombay, India, December 7, 1903, HEBARD Collection, Type No. 720.

Mudumalai, Nilgiris, 1000 m., II, 5, 1927, 1 ♀.
Coimbatore, plains, 400 m., 1921 (A. P. Nathan), 3 ♀ (one caudate, two abbreviate).
Valparai, Anaimalais, 1100 m., III, 1927, 1 ♂.

Coptotettix annandalei Hancock.

We believe that Bolivar's 1918 record of his *C. capitatus* from Somvarpet, Coorg, is based on material of the present species. The general superficial similarity is decided. From comparison with a topotypic Javanese series of *capitatus* we find *annandalei* best distinguished by the slightly narrower fastigium with carinae only indicated laterad, weaker pronotal carinae with median undulate caudad and femora shorter and broader.

Locality: Pollibetta, South Coorg, V, 15 to 26, 1914 (T. B. Fletcher), 1 ♀.

Coptotettix pusillus new species
(figure 10).

This is not only the smallest Indian species of the genus, but also the smallest considered in the present paper.

It is nearest *C. parvulus* Hancock, described from Chapra, Bengal, India[1]. That insect differs in its larger size, narrower vertex which not only is not lamellate produced and does not extend cephalad as far as do the eyes but also has the lateral carinae distinct only laterad and the moderately cristate pronotum with scapular area broader and caudal extremity broadly convex. In our series of *parvulus* tegmina are present in Singla and Kushtea males, present but vestigial in the Chapra male type, absent in a Kobo female. No tegmina are present in our series of *pusillus*.

Type: ♀; Trichinopoly, Madras Presidency, India. 1920. (C. Leigh.) [Hebard Collection, Type No. 1130.]

Size very small, form moderately broad. Fastigium slightly broader than eye, lamellate and briefly produced beyond eyes; medio-longitudinally carinate, this strong distad, laterad strongly fossulate; lateral carinae straight, then rounding strongly and

[1] Single type here selected: ♂; taken by Mackenzie, Hebard Collection, Type No. 691.

almost transverse to median carina which in lateral aspect forms a broadly rounded projecting rectangle with the frontal costa, the latter in lateral aspect almost vertical, showing very feeble convexity and flattened between the antennae. Forks of frontal costa moderately broad, fully as wide as antennal socket, ventrad becoming weakly convergent toward the median carina of the face. Lateral ocelli situated slightly below median point of eye. Antennal sockets with line between ventral margins of eyes passing through them mesad. Pronotum tectate, inconspicuously rugose and finely tuberculate; cephalic margin broadly obtuse-angulate produced, lateral carinae of prozona decided but not involving median carina, which is decidedly elevated, evenly subsiding very gradually caudad and slightly more rapidly cephalad; metazona briefly produced, not reaching apex of abdomen, its broad apex broadly bilobate; lateral lobes with caudal angles not reflexed, broadly rounded but forming an acute angle. Tegmina and wings absent. Ovipositor short and heavy. Cephalic and median femora rather broad, their margins faintly undulate. Caudal femora broad, surfaces less than usually rugose. Caudal metatarsus slightly less than twice as long as third joint, pulvilli very acute, the second intermediate in length between the first and third.

FIG. 10.
Coptotettix pusillus new species.
Female. Type. Trichinopoly, Madras.
Dorsal view of head and pronotum. (× 9)

Allotype: ♂; same data as type. [HEBARD Collection.]

Very similar to female but smaller, minute.

General coloration individually varying from blackish to snuff brown, a broad transverse band of velvety black behind the shoulders in entire series, this invaded by a light fleck in two, one of which has other dark and pale markings. Caudal femora with two large dark patches on dorsal surface and ventro-external surface often heavily washed with blackish, the ventral margin pale with elongate dark flecks. Tibiae pale with suffused dark annuli, last tarsal joint pale but black briefly proximad and extensively distad. Abdomen dark with pale flecks.

Only slight size variation is shown by the females before u..

Length of body ♂ 5.8, ♀ 6.5; interocular width ♂ 0.49, ♀ 0.5; length of pronotum ♂ 4.4, ♀ 5; width of pronotum at shoulders ♂ 1.77, ♀ 2.15; width of pronotal apex ♂ 0.71, ♀ 0.99; length of caudal femur ♂ 4, ♀ 4.3 mm.

Localities: Kodaikanal, Palnis, IV, 19, 1921 (C. LEIGH). 1 ♀, paratype, [HEBARD Cln.].

Trichinopoly, Madras, 1920 (C. LEIGH), 1 ♂, 3 ♀, allotype, type, paratypes, [HEBARD Cln.].